Customer No.: 31561
Application No.: 10/709,824
Docket No.: 12008-US-PA

REMARKS

Present Status of the Application

This is a full and timely response to the outstanding non-final Office Action electronically delivered on June 22, 2007. In the Office Action, it is noted with great appreciation that claims 1-9 have been allowed, while claims 10-16 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Moreover, claims 10-16 have been further rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As regards the prior art rejections, claims 10-13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over either Hassun et al. (USPN 4,454,486, hereinafter "Hassun") or Frank (USPN 5,399,984, hereinafter "Frank") in view of Applicant's FIG. 1 (Prior Art). Upon entry of this response, claims 1-10 and 12-20 remain pending.

Applicant has most respectfully considered the remarks set forth in this Office Action. In response thereto, Applicant has amended claims 10 and 12-16 to particularly indicate the claimed subject matter which Applicant regards as the invention and to more clearly define the subject application over the prior art of references. Claim 11 has been cancelled. Claims 17-20 are newly added by incorporating the allowable subject matter recited in claims 1-4, and thus no new mater is introduced. Care has been exercised to ensure that written support of the newly added claims is able to be observed in Applicant's disclosure. As to the obviousness rejections, it is however strongly believed that the cited references are deficient to adequately teach the claimed features as

indicated in the rejected claims. The grounds of rejection are discussed in detail hereafter, upon which reconsideration of the claims is most earnestly solicited.

Discussion of Office Action Rejections under 35 U.S.C. 112, second paragraph, and 35 U.S.C. 101

Claims 10-16 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 10-16 have been further rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In response thereto, Applicant has respectfully revised claims 10 and 12-16 based on the instruction directed by the Examiner in the Office Action and has cancelled claim 11. To be more specific, the term "method" has been changed to "step" as suggested in the outstanding Office Action, and the wording of a group of process claims 10 and 12-16 has been corrected to expressly disclose all the process limitations and to incorporate a practical application with a concrete, useful, and tangible result. Hence, withdrawal of the 112 rejections and the 101 rejections is earnestly requested.

Discussion of Office Action Rejections under 35 U.S.C. 103

Claims 10-13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over either Hassun or Frank in view of Applicant's FIG. 1 (Prior Art). Applicant respectfully traverses the rejection for at least the following reasons.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be **some suggestion or motivation**, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be **a reasonable expectation of success**. Finally, the prior art reference (or references when combined) **must teach or suggest all the claim limitations**. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. See MPEP § 2143.

With respect to Applicant's claim 10, as currently amended, it recites *inter alia*,

"A method for frequency synthesizing and back-end processing, comprising:

comparing a target frequency with a predetermined value to obtain a comparing result;

selecting one of a first reference frequency and a second reference frequency according to the comparing result to generate a digital signal having a selected reference frequency;

converting the digital signal having the selected reference frequency into an analog signal;

selecting one of the digital signal and the analog signal;

mixing a signal selected from the digital signal and the analog signal to obtain a mixed signal; and

filtering said mixed signal." (Emphasis added)

As underlined and highlighted in bold above, several technical features have been

RECEIVED
CENTRAL FAX CENTER
SEP 19 2007

included into the currently amended claim 10 of the present invention. Support is furnished in FIG. 2 and the corresponding description in the specification of the instant application, and thus no new matter has been introduced by the proposed amendments. In comparison, Hassin merely teaches that a multiplexer 60 is adopted to select one of the outputs of the sine generators 20, 25, 30, and 35 as an output of the multiplexer 60. Besides, Frank only discloses that a multiplexer 4 is utilized to select either a frequency outputted by a first digital frequency generator 10 or a frequency outputted by a second digital frequency generator 20 as an output of the multiplexer 40. As a result, Hassin and Frank, taken alone or in combination, fail to teach or suggest all the technical features recited in the currently amended claim 10 of the present invention, giving rise to a non-establishment of a *prima facie* case of obviousness. Thus, Applicant's claim 10 is rendered novel, non-obvious, and patentable.

Please note that, the currently-amended claims 10, 12~16 are method claims respectively corresponding to the apparatus claims 1, 5~9. Since claims 1-9 are found patentable, and the currently-amended claims 10, 12-16 should be patentable, too.

For at least the foregoing reasons, Applicant respectfully submits that independent claim 10 patently defines over the prior art references, and should be allowed. For at least the same reasons, claims 12-13 depending therefrom also patently define over the prior art as a matter of law. Withdrawal of the 103 rejections of claims 10, 12 and 13 under 35 U.S.C. 103(a) is respectfully requested.

New Claims

Claims 17-20 have been added by incorporating the claimed subject matter recited

in the allowed claims 1-4 of the present invention, and full advertence has been made to ensure new matter is introduced through said addition.

In claim 17, as newly added, it recites *inter alia*,

"A frequency synthesizer, comprising:

a first multiplexer;

a first memory unit, coupled to said first multiplexer, for storing a first reference frequency;

a second memory unit, coupled to said first multiplexer, for storing a second reference frequency;

a shift register, for storing a target frequency and comparing the target frequency with a predetermined value; and

a control unit, coupled to said shift register, said control unit based on a result of comparing said target frequency with said predetermined value selecting one of said first reference frequency and said second reference frequency passes said first multiplexer." (Emphasis added)

As underlined and highlighted in bold hereinbefore, the newly added independent claim 17 of the instant application is equipped with several unique technical features. By contrast, nevertheless, Hassin merely teaches that the multiplexer 60 is adopted to select one of the outputs of the sine generators 20, 25, 30, and 35 as the output of the multiplexer 60. Besides, Frank only discloses that the multiplexer 4 is utilized to select either the frequency outputted by the first digital frequency generator 10 or the frequency outputted by the second digital frequency generator 20 as the output of the multiplexer 40.